



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

OCT 27 2015

Ref: 8ENF-UFO

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Kerry Smith, CEO
Monument Global Resources, Inc.
12160 N. Abrams Road, Suite 610
Dallas, Texas 75243

Re: Underground Injection Control (UIC); Notice of Violation: Loss of Mechanical Integrity for the Cache 15 Well (EPA Well No. CO20000-02357, API No. 05-083-05346); located in the Cache Oil Field, Montezuma County, CO

Dear Mr. Smith:

On September 25, 2015, the Environmental Protection Agency received annulus monitoring chart records by way of email from Monument Global Resources, Inc. (Monument Global) on the above referenced well. The chart records measured annulus pressure history from August 11, 2015, to September 21, 2015. During that time, the chart records showed sharp, rapid spikes in annulus pressures, of up to 580 pounds per square inch (psi), followed by slow gradual pressure decreases. Additionally, the pressure in the annulus never decreased below 300 psi. The annulus pressure should be maintained at zero psi. The observation of the high pressures, as well as the observed pressure spikes in the annulus is indicative of a loss of mechanical integrity.

Pursuant to Title 40 of the Code of Federal Regulations Section 144.28(f)(2) (40 C.F.R. § 144.28(f)(2)), you must establish and maintain mechanical integrity. A loss of mechanical integrity is a violation of this requirement.

Pursuant to 40 C.F.R. § 144.28(f)(3), you must immediately cease injection into this well. Before injection may resume, you must demonstrate that the above-referenced well has mechanical integrity. You must also receive written authorization from the EPA. Due to the history of mechanical integrity concern associated with this well, the EPA is requiring that both part I and II mechanical integrity be demonstrated for this well.

To demonstrate part I mechanical integrity, a mechanical integrity test (MIT) shall be conducted in accordance with the enclosed guidance. Particularly, both the annulus and tubing pressures shall be monitored and recorded during the test. To demonstrate part II mechanical integrity, a temperature log must be performed to evaluate whether any leaks or upward movement of fluid exists through vertical channels adjacent to the injection well bore. Additionally, the EPA's records indicated that Monument

Global performed a cement squeeze on the above-referenced well in July 2014. Pursuant to 40 C.F.R. § 144.27, the EPA requires that a cement bond log be performed to verify the effectiveness of this work.

It is expected that you will return this well to compliance within ninety (90) days of the receipt of this letter. Within thirty (30) days of completion of work activities, please submit all test data to:

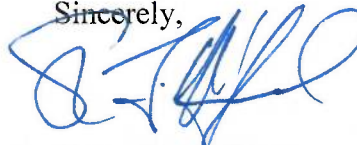
Gary Wang
Underground Injection Control Enforcement Unit
1595 Wynkoop Street
ENF-UFO
Denver, Colorado 80202

If you choose to plug and abandon this well, a plugging and abandonment plan must be submitted to the EPA for approval prior to the plugging operation.

Failure to comply with UIC regulations found at 40 C.F.R. Parts 144 and 146 constitutes one or more violations of the Safe Drinking Water Act, 42 U.S.C. § 300h. Such non-compliance may subject you to formal enforcement by the EPA, as codified at 40 C.F.R. Part 22.

If you have any questions concerning this letter, you may contact Gary Wang at (303) 312-6469. Please direct all correspondence to the attention of Gary Wang at Mail Code 8ENF-UFO.

Sincerely,



Shaun L. McGrath
Regional Administrator

Enclosure

1. Groundwater Section Guidance No. 38 – Using temperature surveys to determine Mechanical Integrity for class II injection well that has tubing cemented inside casing.
2. Groundwater Section Guidance No. 39 – Pressure testing injection wells for Part I (internal) Mechanical Integrity

cc: Tom Fox, Field Operations, Monument Global Resources, Inc.
Manuel Heart, Chairman, Ute Mountain Ute Tribe
Scott Clow, Environmental Director, Environmental Programs Department, Ute Mountain Ute Tribe



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

AUG - 9 1995

SUBJECT: GROUND WATER SECTION GUIDANCE NO. 38
Using temperature surveys to determine Mechanical Integrity for a Class II injection well that has tubing cemented inside casing.

FROM: Tom Pike, Chief *Tom Pike*
UIC Direct Implementation Section

TO: All Section Staff
Montana Operations Office

The purpose of this guidance is to provide a standard logging procedure when using temperature logs to determine MI in a Class II injection well that has tubing cemented inside casing. It may also be used to verify confinement within the injection formation.

LOGGING PROCEDURE

Run the temperature survey going into the hole with the temperature sensor located as close to the bottom of the tool as possible. The tool need not be centralized.

Record temperatures at 1-5°F per inch, on a 5" per 100 ft. log scale.

Logging speed should be within 20 - 30 ft/min.

Run the log from ground level to total depth (or plug-back depth) of the well.

When using digital logging equipment, use the highest digital sampling rate possible. Filtering should be kept to a minimum so that small-scale results are obtained.

Record the first log trace while injecting at the maximum allowed injection pressure. Subsequent to the temperature survey, maximum injection pressure will be limited to the pressure used during the survey.

LOG TRACES

Record the first log trace while the well is actively injecting, recording traces for gamma ray, temperature, and differential temperature.

Shut-in (not injecting) temperature curves should be recorded at intervals depending on the length time that the injection well has been active. Preferred time intervals are shown in the following table:

ACTIVE INJECTION	RECORD SHUT-IN CURVES AT THESE TIMES (HRS)				
1 MONTH	1	3	6	12	
6 MONTHS	1	6	10-12	22-24	
1 YEAR	1	10-12	22-24	45-48	
5 YEARS	1	10-12	22-24	45-48	90-96
10 YEARS OR MORE	1	22-24	45-48	90-96	186-192



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REGION VIII

999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

SEP 27 1995

SUBJECT: GROUND WATER SECTION GUIDANCE NO. 39
Pressure testing injection wells for Part I (internal)
Mechanical Integrity

FROM: Tom Pike, Chief *Tom Pike*
UIC Direct Implementation Section

TO: All Section Staff
Montana Operations Office

Introduction

The Underground Injection Control (UIC) regulations require that an injection well have mechanical integrity at all times (40 CFR 144.28 (f)(2) and 40 CFR 144.51 (q)(1)). A well has mechanical integrity (40 CFR 146.8) if:

- (1) There is no significant leak in the tubing, casing or packer; and
- (2) There is no significant fluid movement into an underground source of drinking water (USDW) through vertical channels adjacent to the injection wellbore.

Definition: Mechanical Integrity Pressure Test for Part I. A pressure test used to determine the integrity of all the downhole components of an injection well, usually tubing, casing and packer. It is also used to test tubing cemented in the hole by using a tubing plug or retrievable packer. Pressure tests must be run at least once every five years. If for any reason the tubing/packer is pulled, the injection well is required to pass another mechanical integrity test of the tubing casing and packer prior to recommencing injection regardless of when the last test was conducted. Tests run by operators in the absence of an EPA inspector must be conducted according to these procedures and recorded on either the attached form or an equivalent form containing the necessary information. A pressure recording chart documenting the actual annulus test pressures must be attached to the form.

This guidance addresses making a determination of Part I of Mechanical Integrity (no leaks in the tubing, casing or packer). The Region's policy is: 1) to determine if there are significant leaks in the tubing, casing or packer; 2) to assure that the casing can withstand pressure similar to that which would be applied if the tubing or packer fails; 3) to make the Region's test procedure consistent with the procedures utilized

by other Region VIII Primacy programs; and 4) to provide a procedure which can be easily administered and is applicable to all class I and II wells. Although there are several methods allowed for determining mechanical integrity, the principal method involves running a pressure test of the tubing/casing annulus. Region VIII's procedure for running a pressure test is intended to aid UIC field inspectors who witness pressure tests for the purpose of demonstrating that a well has Part I of Mechanical Integrity. The guidance is also intended as a means of informing operators of the procedures required for conducting the test in the absence of an EPA inspector.

Pressure Test Description

Test Frequency

The mechanical integrity of an injection well must be maintained at all times. Mechanical integrity pressure tests are required at least every five (5) years. If for any reason the tubing/packer is pulled, however, the injection well is required to pass another mechanical integrity test prior to recommencing injection regardless of when the last test was conducted. The Regional UIC program must be notified of the workover and the proposed date of the pressure test. The well's test cycle would then start from the date of the new test if the well passes the test and documentation is adequate. Tests may be required on a more frequent basis depending on the nature of the injectate and the construction of the well (see Section guidance on MITs for wells with cemented tubing and regulations for Class I wells).

Region VIII's criteria for well testing frequency is as follows:

1. Class I hazardous waste injection wells; initially [40 CFR 146.68(d)(1)] and annually thereafter;
2. Class I non-hazardous waste injection wells; initially and every two (2) years thereafter, except for old permits (such as the disposal wells at carbon dioxide extraction plants which require a test at least every five years);
3. Class II wells with tubing, casing and packer; initially and at least every five (5) years thereafter;
4. Class II wells with tubing cemented in the hole; initially and every one (1) or two (2) years thereafter depending on well specific conditions (See Region VIII UIC Section Guidance #36);
5. Class II wells which have been temporarily abandoned (TAd) must be pressure tested after being shut-in for two years; and
6. Class III uranium extraction wells; initially.

Test Pressure

To assure that the test pressure will detect significant leaks and that the casing is subjected to pressure similar to that which would be applied if the tubing or packer fails, the tubing/casing annulus should be tested at a pressure equal to the maximum allowed injection pressure or 1000 psig whichever is less. The annular test pressure must, however, have a difference of at least 200 psig either greater or less than the injection tubing pressure. Wells which inject at pressures of less than 300 psig must test at a minimum pressure of 300 psig, and the pressure difference between the annulus and the injection tubing must be at least 200 psi.

Test Criteria

1. The duration of the pressure test is 30 minutes.
2. Both the annulus and tubing pressures should be monitored and recorded every five (5) minutes.
3. If there is a pressure change of 10 percent or more from the initial test pressure during the 30 minute duration, the well has failed to demonstrate mechanical integrity and should be shut-in until it is repaired or plugged.
4. A pressure change of 10 percent or more is considered significant. If there is no significant pressure change in 30 minutes from the time that the pressure source is disconnected from the annulus, the test may be completed as passed.

Recordkeeping and Reporting

The test results must be recorded on the attached form. The annulus pressure should be recorded at five (5) minute intervals. Tests run by operators in the absence of an EPA inspector must be conducted according to these procedures and recorded on the attached form or an equivalent form. A pressure recording chart documenting the actual annulus test pressures must be attached to the submittal. The tubing pressure at the beginning and end of each test must be recorded. The volume of the annulus fluid bled back at the surface after the test should be measured and recorded on the form. This can be done by bleeding the annulus pressure off and discharging the associated fluid into a five gallon container. The volume information can be used to verify the approximate location of the packer.

Procedures for Pressure Test

1. Scheduling the test should be done at least two (2) weeks in advance.

2. Information on the well completion (location of the packer, location of perforations, previous cement work on the casing, size of casing and tubing, etc.) and the results of the previous MIT test should be reviewed by the field inspector in advance of the test. Regional UIC Guidance #35 should also be reviewed. Information relating to the previous MIT and any well workovers should be reviewed and taken into the field for verification purposes.
3. All Class I wells and Class II SWD wells should be shut-in prior to the test. A 12 to 24-hour shut-in is preferable to assure that the temperature of the fluid in the wellbore is stable.
4. Class II enhanced recovery wells may be operating during the test, but it is recommended that the well be shut-in if possible.
5. The operator should fill the casing/tubing annulus with inhibited fluid at least 24 hours in advance, if possible. Filling the annulus should be undertaken through one valve with the second valve open to allow air to escape. After the operator has filled the annulus, a check should be made to assure that the annulus will remain full. If the annulus can not maintain a full column of fluid, the operator should notify the Director and begin a rework. The operator should measure and report the volume of fluid added to the annulus. If not already the case, the casing/tubing valves should be closed, at least, 24 hours prior to the pressure test.

Following steps are at the well:

6. Read tubing pressure and record on the form. If the well is shut-in, the reported information on the actual maximum operating pressure should be used to determine test pressures.
7. Read pressure on the casing/tubing annulus and record value on the form. If there is pressure on the annulus, it should be bled off prior to the test. If the pressure will not bleed-off, the guidance on well failures (Region VIII UIC Section Guidance #35) should be followed.
8. Ask the operator for the date of the last workover and the volume of fluid added to the annulus prior to this test and record information on the form.
9. Hook-up well to pressure source and apply pressure until test value is reached.

10. Immediately disconnect pressure source and start test time (If there has been a significant drop in pressure during the process of disconnection, the test may have to be restarted). The pressure gages used to monitor injection tubing pressure and annulus pressure should have a pressure range which will allow the test pressure to be near the mid-range of the gage. Additionally, the gage must be of sufficient accuracy and scale to allow an accurate reading of a 10 percent change to be read. For instance, a test pressure of 600 psi should be monitored with a 0 to 1000 psi gage. The scale should be incremented in 20 psi increments.
11. Record tubing and annulus pressure values every five (5) minutes.
12. At the end of the test, record the final tubing pressure.
13. If the test fails, check the valves, bull plugs and casing head close up for possible leaks. The well should be retested.
14. If the second test indicates a well failure, the Region should be informed of the failure within 24 hours by the operator, and the well should be shut-in within 48 hours per Headquarters guidance #76. A follow-up letter should be prepared by the operator which outlines the cause of the MIT failure and proposes a potential course of action. This report should be submitted to EPA within five days.
15. Bleed off well into a bucket, if possible, to obtain a volume estimate. This should be compared to the calculated value obtained using the casing/tubing annulus volume and fluid compressibility values.
16. Return to office and prepare follow-up.

Alternative Test Option

While it is expected that the test procedure outlined above will be applicable to most wells, the potential does exist that unique circumstances may exist for a given well that precludes or makes unsafe the application of this test procedure. In the event that these exceptional or extraordinary conditions are encountered, the operator has the option to propose an alternative test or monitoring procedures. The request must be submitted by the operator in writing and must be approved in writing by the UIC-Implementation Section Chief or equivalent level of management.

Attachment